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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/655,402	09/05/2000	Seung Woog Choi	K-214	8209

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EXAMINER

D AGOSTA, STEPHEN M

ART UNIT PAPER NUMBER

2683

DATE MAILED: 11/15/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No. 09/655,402	Applicant(s) CHOI, SEUNG WOOG	
	Examiner Stephen M. D'Agosta	Art Unit 2683	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 October 2004.
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 5-20 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1,5-7,11,12,15 and 18-20 is/are rejected.
7) ☒ Claim(s) 8-10,13,14,16 and 17 is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

In view of the Appeal Brief filed on 10-4-2004, PROSECUTION IS HEREBY REOPENED. The new ground of rejection is set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

- (1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,
- (2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

-- The examiner notes that much of the applicant's argument focuses on the limitation stating that "the transmit power level of the mobile is not lowered during a soft handoff". Hence the examiner re-opens prosecution to fully address this point and adds new art in this Non-final Office Action.

Claim Rejections - 35 USC § 103

Claims 1 and 5-7, 11-12, 15 and 18-20 rejected under 35 U.S.C. 103(a) as being unpatentable over Bojerd US 5,946,622 in view of Weaver Jr. et al. US 5,917,811, Tiedemann Jr. et al. US 5,999,816 and Gilhousen et al. US 5,603,096 (hereafter Bojerd, Weaver, Tiedemann Jr and Gilhousen).

As per **claims 1 and 11**, Bojerd teaches a cellular/wireless system that supports both macrocell and picocell service (abstract and figure 1) and the ability to handoff between the two systems (C1, L30-37) **but is silent on** performing power control such that a transmission power level of said mobile station is not lowered, if said mobile station is determined to be within said soft handoff region and if a soft handoff of said

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mobile station is required wherein the transmission power level of said mobile is not lowered during a transmission of an extended handoff direction message and handoff complete message.

Gilhausen teaches reverse link closed loop power control whereby "...If the mobile is in a soft hand-off mode, then power control commands are received from two or more base stations at the same time. The general rule for combining the control commands from multiple base stations is that power is turned up only if all received power control commands agree to turn up the power. Power will be turned down if any of the power control signals instruct the mobile to "turn down". Power will be unchanged if all but one base station command "turn up" and one commands "no change" (C6, L55-65). This discloses that three options are available for power control during a soft handoff from any cell to another, ie. increase, decrease or do not change transmit power).

While EHDM/HCM messages are well known in the art and used for standard cellular handoff operations, the examiner puts forth **Tiedemann** who teaches EHDM and HCM messages (C7, L26-38, C9, L29-46 and C14, L13-31) and also discloses both forward and reverse power control (figures 8-10d and C15, L63 to C19, L45).

With further regard to claim 11, Bojerd is silent on setting a reverse link coverage of said picocell greater than a forward link coverage of said picocell if said mobile is determined to be within said handoff region and if a soft handoff of said mobile is required.

Weaver teaches a base station which balances a forward link coverage area to a reverse link coverage area (C46, L10-14). Since Weaver teaches balancing the two coverage areas, one skilled in the art expects that they can be unequal too (eg. reverse link coverage area is greater than forward link coverage area).

It would have been obvious to one skilled in the art at the time of the invention to modify Bojerd, such that forward/reverse power control is not lowered and EHDM/HCM messages are used, to provide dynamic power control (ie. power up, down, same) via known messaging standards during soft handoff in macro/picocell areas.

As per **claims 12 and 15**, Bojerd teaches a cellular/wireless system that supports both macrocell and picocell service (abstract and figure 1) and the ability to handoff between the two systems (C1, L30-37) **but is silent on** performing power control such that a transmission power level of said mobile station is maintained or increased.

Gilhausen teaches reverse link closed loop power control whereby "...If the mobile is in a soft hand-off mode, then power control commands are received from two or more base stations at the same time. The general rule for combining the control commands from multiple base stations is that power is turned up only if all received power control commands agree to turn up the power. Power will be turned down if any of the power control signals instruct the mobile to "turn down". Power will be unchanged if all but one base station command "turn up" and one commands "no change" (C6, L55-65). This discloses that three options are available for power control during a soft handoff from any cell to another, ie. increase, decrease or do not change transmit power).

It would have been obvious to one skilled in the art at the time of the invention to modify Bojerd, such that power is maintained or increased, to provide dynamic power control.

As per **claims 5-7**, Bojerd teaches a cellular/wireless system that supports both macrocell and picocell service (abstract and figure 1) and the ability to handoff between the two systems (C1, L30-37) and picocell base stations that have the ability provide RF cellular communication support (eg. power control) for any mobile unit within its region (C1, L60-66) **but is silent on** power control and forward/reverse link coverage.

Gilhausen teaches reverse link closed loop power control whereby "...If the mobile is in a soft hand-off mode, then power control commands are received from two or more base stations at the same time. The general rule for combining the control commands from multiple base stations is that power is turned up only if all received power control commands agree to turn up the power. Power will be turned down if any of the power control signals instruct the mobile to "turn down". Power will be unchanged

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if all but one base station command "turn up" and one commands "no change" (C6, L55-65). This discloses that three options are available for power control during a soft handoff from any cell to another, ie. increase, decrease or do not change transmit power).

Weaver teaches a base station a base station which balances a forward link coverage area to a reverse link coverage area (C46, L10-14). Since Weaver teaches balancing the two coverage areas, one skilled in the art expects that they can be unequal too (eg. reverse link coverage area is greater than forward link coverage area).

It would have been obvious to one skilled in the art at the time of the invention to modify Bojerd, such that power is maintained or increased, to provide dynamic power control and specific coverage area(s).

As per **claims 18-19**, Bojerd teaches claim 12 **but is silent on** controlling transmission power of a base station which provides service to said picocell to set said forward link coverage greater than/relatively equal to a size of said picocell.

Gilhousen teaches reverse link closed loop power control whereby "...If the mobile is in a soft hand-off mode, then power control commands are received from two or more base stations at the same time. The general rule for combining the control commands from multiple base stations is that power is turned up only if all received power control commands agree to turn up the power. Power will be turned down if any of the power control signals instruct the mobile to "turn down". Power will be unchanged if all but one base station command "turn up" and one commands "no change" (C6, L55-65). This discloses that three options are available for power control during a soft handoff from any cell to another, ie. increase, decrease or do not change transmit power).

Weaver teaches a base station a base station which balances a forward link coverage area to a reverse link coverage area (C46, L10-14). Since Weaver teaches balancing the two coverage areas, one skilled in the art expects that they can be unequal too (eg. reverse link coverage area is greater than forward link coverage area).

It would have been obvious to one skilled in the art at the time of the invention to modify Bojerd, such that power is maintained or increased, to provide dynamic coverage area(s).

As per **claim 20**, Bojerd teaches a cellular/wireless system that supports both macrocell and picocell service (abstract and figure 1) and the ability to handoff between the two systems (C1, L30-37) **but is silent on** setting reverse link coverage of picocell greater than forward link coverage for soft handoff wherein controlling transmission power of BTS of picocell to set forward link coverage relatively equal to a size of said picocell and setting reverse link coverage greater than forward link coverage by not attenuating signals received by base station AND performing power control such that a transmission power level of said mobile station is not lowered, if said mobile station is determined to be within said soft handoff region and if a soft handoff of said mobile station is required.

Gilhousen teaches reverse link closed loop power control whereby "...If the mobile is in a soft hand-off mode, then power control commands are received from two or more base stations at the same time. The general rule for combining the control commands from multiple base stations is that power is turned up only if all received power control commands agree to turn up the power. Power will be turned down if any of the power control signals instruct the mobile to "turn down". Power will be unchanged if all but one base station command "turn up" and one commands "no change" (C6, L55-65). This discloses that three options are available for power control during a soft handoff from any cell to another, ie. increase, decrease or do not change transmit power).

Weaver teaches a base station a base station which balances a forward link coverage area to a reverse link coverage area (C46, L10-14). Since Weaver teaches balancing the two coverage areas, one skilled in the art expects that they can be unequal too (eg. reverse link coverage area is greater than forward link coverage area).

It would have been obvious to one skilled in the art at the time of the invention to modify Bojerd, such that power is maintained or increased, to provide dynamic power control during soft handoff in macro/picocell areas.

Allowable Subject Matter

Claims 8-10, 13-14 and 16-17 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

These claims recite highly specific designs which are not disclosed in the prior art of record and are novel in the examiner's opinion.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

1. Furukawa et al. US 6,539,226
2. Yoshida et al. US 6,418,320

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen M. D'Agosta whose telephone number is 703-306-5426. The examiner can normally be reached on M-F, 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Trost can be reached on 703-308-5318. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Stephen D'Agosta
11-10-04



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